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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,086	10/19/2001	Jeong-kwan Lee	1293.1270	6758

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EXAMINER
GEBREMARIAM, SAMUEL A

ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/982,086	LEE ET AL.	
	Examiner	Art Unit	
	Samuel A Gebremariam	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 13 paragraph 40 line 4 refers to upper electrode 250 that does not exist in fig. 5. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claim 23 is rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. US patent No. 6,253,004.

Lee teaches a micro-lens built-in vertical cavity surface emitting laser (VCSEL), comprising: a micro-lens 103 integrally formed on a laser beam emitting surface 101 of the VCSEL emitting a parallel light beam B (fig. 1).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-9, 11-14 and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Shimada et al. US patent No. 5,084,895.

Regarding claim 1 admitted prior art teaches a vertical cavity surface emitting laser (VCSEL) comprising: a substrate 10; a lower reflector formed on the substrate 11; an active layer 12 formed on the lower reflector, generating light by a recombination of electrons and holes; an upper reflector 14 formed on the active layer comprising a lower reflectivity than that of the lower reflector; a micro-lens disposed in a window region through which the laser beam is emitted; an upper electrode formed above the upper reflector excluding the window region; and a lower electrode formed underneath the substrate.

Admitted prior art does not teach a lens layer formed on the upper reflector with a transparent material transmitting a laser beam, the lens layer comprising the micro-lens.

Shimada teaches forming a semiconductor light emitting element 1 a lens layer 30 and a micro-lens 2 (fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the microlens portion of Shimada's device into the structure of admitted prior art since the modification can make finding the optical axis of the laser and the lens easier (column 1, lines 15-20).

Regarding claim 2, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claim 1 above except explicitly stating that the VCSEL satisfies a following relationship: f =Rxn1/(n2-n1) where f is a distance along an optical axis from a light generating region of the active layer to a vertex of the micro-

lens, R is a radius of curvature of the micro-lens, n1 is an effective refractive index of a medium on an optical path between the light generating region and the lens layer, and n2 is a refractive index of a region towards which a light is emitted through the micro-lens.

As applicant would agree the formula above is a well known in the art. Since the combined structure of admitted prior art and Shimada results in a structure identical to the claimed invention the VCSEL structure inherently satisfies the relationship above.

Regarding claim 3, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claim 1 above including a high-resistance region 13 between the upper and lower reflectors relatively close to the active layer, the high-resistance region having an aperture at a center thereof through which a current flows (fig. 1, admitted prior art).

Regarding claims 5 and 11, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claim 1 except explicitly stating that the micro-lens is formed by diffusion-limited etching.

The limitation that the micro-lens is formed by diffusion-limited etching is considered a product-by-process claim. "[E]ven though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product

was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claims 6 and 7, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claims 1-3 except explicitly stating the window region comprises a maximum width smaller than a size of light generated in the active layer emitted towards the window region, satisfying a Fraunhofer diffraction condition occurring in the window region is offset by a focusing power of the micro-lens, where the maximum width of the window region D and a focal length f of the micro-lens satisfy a relation:

$D= (2x1.22\lambda f)^{1/2}$ where k, is a wavelength of the laser beam emitted from the VCSEL.

Since the combined structure of admitted prior art and Shimada is identical to the claimed device the combined structure satisfies the Fraunhofer diffraction condition as claimed.

Regarding claims 8 and 9, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claim 1 except explicitly stating that the high-resistance region according to claims 6 and 7, between the upper and lower reflectors, relatively close to the active layer, the high-resistance region comprising an aperture at a center thereof through which a current flows, the aperture of the high-resistance region comprising a maximum width greater than or approximately equal to the maximum width of the window region.

The width of the aperture of the high resistance region and the width of the window is a variable that is subject to optimization through routine experimentation. It would have been obvious to one of ordinary skill to in the art at the time the invention was made to vary the width of the aperture of high resistance region and window region, since it has been held that discovering an optimum value of a result effective variable involves on routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 12-15, 16, 17-21 and 22, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claims 1-4, 5, 6-10 and 11, except explicitly stating that the substrate is now used for transmitting the laser beam and the substrate comprises the microlens.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to invert the combined structure of admitted prior art and Shimada and form the lens and micro-lens in the lower portion of the combined structure, since it has been held that rearranging parts of the invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Claims 4 and 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Shimada and in further view of Hyugaji US patent No. 5,506,451.

The combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claim 1 above except explicitly stating that the lens layer is formed of a material comprising at least one of silicon and a III-V compound semiconductor,

wherein the III-V compound semiconductor comprises one of indium phosphide (InP), gallium arsenide (GaAs), indium arsenide (InAs), gallium phosphide (GaP), indium gallium phosphide (InGaP), indium gallium arsenide (InGaAs), and aluminum gallium arsenide (AlGaAs), the material comprising a relatively large bandgap to a wavelength of the laser beam so as not to absorb the laser beam.

It is conventional and also taught by Hyugaji forming a lens layer using InP (col. 5, line 65-, col. 6., line 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the lens layer formed using InP taught by Hyugaji in the structure of the combined structure of admitted prior art and Shimada.

Claims 23-64, are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Shimada and in further view of lee.

Regarding claim 23-26, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claims 1-3, 5, 6-9 except explicitly stating a micro-lens integrally formed on a laser beam-emitting surface of the VCSEL emitting a parallel light beam.

Lee teaches a micro-lens built-in vertical cavity surface emitting laser (VCSEL), comprising: a micro-lens 103 integrally formed on a laser beam emitting surface 101 of the VCSEL emitting a parallel light beam B (fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate parallel light beam emitting capacity taught by Lee in

the structure of admitted prior art and Shimada in order to form beams of appropriate sizes.

Regarding claim 27, the combined teaching of admitted prior art and Shimada teaches substantially the entire structure of claims 1-3, 5, 6-9 and 23 except explicitly stating that the aperture is small where the current applied through the upper electrode passes a region on the active layer and the light beam is generated in a dot-sized region of the active layer.

The size of the aperture and the area of the light beam generated on the active layer are variables that are subject to optimization through routine experimentation. It would have been obvious to one of ordinary skill to in the art at the time the invention was made to vary the size of the aperture and the light beam area on the active layer as claimed, since it has been held that discovering an optimum value of a result effective variable involves on routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 28, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9 and 23 including the micro-lens lies along a central optical axis of the light beam emitted from the VCSEL (fig. 1, Shimada).

Regarding claims 29-31 and 32, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-4, 5, 6-10 and 23 including the lower reflector, the active layer, and the upper reflector are sequentially stacked on the substrate, the lower reflector and the upper reflector are

formed of alternating semiconductor compounds comprising different refractive indexes and the lower reflector is doped with the same n-type impurities and the upper reflector is doped with p-type impurities (fig. 1, page 2, paragraph 5, prior art).

Regarding claim 33, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9 and 23 including the active layer 14 is formed of GaAs according to a wavelength of the light beam (fig. 1, Shimada, col. 2, lines 65-68).

Regarding claims 34 and 36, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9 and 23 except explicitly stating that the high-resistance region comprising an aperture at a center thereof through which current applied through the upper electrode flows and high-resistance region is formed by implantations of ions or by selective oxidation in a region of the upper reflector and the micro-lens comprises a convex surface formed by diffusion-limited etching.

The limitations that the high resistance as claimed is formed by implantation of ions or selective oxidation and the micro-lens is formed by diffusion-limited etching are considered a product-by-process claim. "[E]ven though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product

was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 37, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9 and 23 including the upper electrode 16 is formed between the upper reflector and the lens layer (fig. 1, Shimada).

Regarding claims 38–40, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9 and 23 except explicitly stating that the distance along an optical axis from the light generating region to a vertex of the micro-lens is equal to a focal length of the micro-lens where the VCSEL satisfies a following relationship: f =Rxn1/(n2-n1) where f is a distance along an optical axis from the light generating region to the vertex of the micro-lens, R is a radius of curvature of the micro-lens, n1 is an effective refractive index of a medium on an optical path between the light generating region and the lens layer, and n2 is a refractive index of a region toward which the light beam is emitted through the micro-lens; and the VCSEL also satisfies a following relationship: nl/Sl+n2/S2=(n2-nl)/R where S1 is a distance from the light generating region of the active layer to a vertex of the micro-lens on the optical axis, S2 is a distance from the vertex of the micro-lens to a second focal point of the micro-lens, n1 is an effective refractive index of the medium from the upper reflector and the lens layer, and n2 is a refractive index of a region toward which the light beam emitted through the micro-lens travels.

As applicant would agree the formulas above are well known in the art. Since the combined structure of admitted prior art and Shimada results in a structure identical to the claimed invention the VCSEL structure inherently satisfies the relationships above.

With regards to the limitation that the distance along an optical axis from the light-generating region to a vertex of the micro-lens is equal to a focal length of the micro-lens is within the scope of one having ordinary skill in the art to find the optimal distance as claimed through obvious and routine experimentation.

Regarding claim 41, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9 and 23 above except explicitly stating a forward biased current is applied to the micro-lens built-in VCSEL through the upper and lower electrodes, the light beam comprising a particular wavelength through laser oscillation is transmitted through the upper reflector and the lens layer and is condensed by the micro-lens and emitted as the parallel laser beam.

The above claimed limitation is the way VCSEL fitted with a micro-lens operates under normal operation condition. Since the claimed structure is identical to the combined structure of admitted prior art, Shimada and Lee it inherently operates as claimed above.

Regarding claim 42-46, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above including the VCSEL is a top-emitting type VCSEL (fig. 1, Shimada).

The combined teaching of admitted prior art, Shimada and Lee does not explicitly teach the limitation that the micro-lens is formed in the window region of the substrate through which the light beam is condensed and emitted.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to invert the combined structure of admitted prior art, Shimada and Lee and form the lens and micro-lens in the lower portion of the combined structure, since it has been held that rearranging parts of the invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Regarding claims 47-48, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-4, 5, 6-10, 12 and 23 above except explicitly stating that when a number of stacked layers of the lower reflector is smaller than that of the upper reflector, the reflectivity of the lower reflector is lower than that of the upper reflector and most of the laser beam is emitted through the lower reflector.

The number of stacked layers of the lower and upper reflectors is a variable that are subject to optimization through routine experimentation. It would have been obvious to one of ordinary skill to in the art at the time the invention was made to vary the size of the reflector layers as claimed, since it has been held that discovering an optimum value of a result effective variable involves on routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 49-50, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-4, 5, 6-10, 12 and

23 above including the lower reflector and the upper reflector are formed of alternating semiconductor compounds comprising different refractive indexes (fig. 1, prior art).

Since the combined structure of admitted prior art, Shimada and Lee is identical to the claimed structure it inherently have the claimed property.

Regarding claim 51, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above except explicitly stating that the VCSEL satisfies a following relationship: f'= R'xn1'/(n2'-n1') where R' is a radius of curvature of the micro-lens, n1' is a effective refractive index of a medium along an optical path between the light generating region of the active layer and the micro-lens, and n2' is a refractive index of a region toward which the light beam emits through the micro-lens, f' is a distance from the light generating region to a vertex of the micro-lens along the optical axis.

As applicant would agree the formula above is well known in the art. Since the combined structure of admitted prior art, Shimada and Lee results in a structure that is identical to the claimed invention the VCSEL structure inherently satisfies the relationship above.

Regarding claims 52 and 53, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above except explicitly stating that a forward biased current is applied to the micro-lens built-in VCSEL through the upper and lower electrodes, a laser beam comprising a particular wavelength through laser oscillation is transmitted through the

lower reflector and the substrate and is condensed by the micro-lens and emitted as the parallel laser beam and the VCSEL is a bottom-emitting type VCSEL.

The above claimed limitation is the way VCSEL fitted with a micro-lens at the bottom operates under normal operation condition. Since the claimed structure is identical to the combined structure of admitted prior art, Shimada and Lee it inherently operates as claimed above.

Regarding claims 54 and 55, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above except explicitly stating that an upper reflector comprising a relatively lower reflectivity than that of the lower reflector.

The reflectivity of the upper and lower reflectors and the window size are variables that are subject to optimization through routine experimentation. It would have been obvious to one of ordinary skill to in the art at the time the invention was made to vary the reflectivity and window size as claimed, since it has been held that discovering an optimum value of a result effective variable involves on routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 56, 57 and 61, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-4, 5, 6-10, 12 and 23 above except explicitly stating that the Fraunhofer diffraction condition of the window is offset by a focusing power of the micro-lens so that a parallel laser beam is emitted through the micro-lens the diameter D of the window and a focal length f of

the micro-lens satisfy a following relationship: $D = (2 \times 1.22 \lambda f)^{1/2}$ where λ is a wavelength of the light beam emitted from the VCSEL and also a following relationship: $N_f = D^2/\lambda d \ll 1$; where N_f is a Fresnel number, λ, is a wavelength of the light beam emitted from the VCSEL, D is the diameter of the window, and d is a distance from the window to an observing plane, which is one focal point of the micro-lens.

Since the combined structure of admitted prior art, Shimada and Lee is identical to the claimed device the combined structure satisfies the Fraunhofer diffraction conditions as claimed.

Regarding claim 58, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above including the high-resistance region between the upper and lower reflectors relatively close to the active layer, the high-resistance region comprises an aperture at the center thereof through which a current flows (fig. 1, Shimada).

Regarding claim 59, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above except explicitly stating that the diameter of the window is smaller than or approximately equal to a diameter of the aperture of the high-resistance region.

The diameter of the window and aperture is a variable that is subject to optimization through routine experimentation. It would have been obvious to one of ordinary skill to in the art at the time the invention was made to vary the of the window and aperture as claimed, since it has been held that discovering an optimum value of a

result effective variable involves on routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 60 and 62, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above including the window and the micro-lens are positioned on a same and the micro-lens and the window are positioned on a same plane (fig. 1, Shimada).

Regarding claim 63, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above except explicitly stating that when the micro-lens and the window are positioned on a same plane and only a O^{th} -order diffracted beam comprising a high intensity is considered, a radius RS of the O^{th}-order diffracted beam satisfies a following relationship: $R_s = 1.22\lambda d / D$ where λ, is a wavelength of the light beam emitted from the VCSEL, D is the diameter of the window, and d is a distance from the window to an observing plane.

Since the combined structure of admitted prior art, Shimada and Lee is identical to the claimed device the combined structure satisfies the above relationship as claimed.

Regarding claim 64, the combined teaching of admitted prior art, Shimada and Lee teaches substantially the entire claimed structure of claims 1-3, 5, 6-9, 12 and 23 above including the VCSEL is a top-emitting type VCSEL (fig. 1, Shimada).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References C-G are cited as being related to VCSEL.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Admassu Gebremariam whose telephone number is 703 305 1913. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Samuel Admassu Gebremariam
July 12, 2002

Steven Loke
Primary Examiner